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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,174	10/23/2003	Benjamin N. Eldridge	P47C2-US	8347

50905 7590 11/06/2006

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EXAMINER

ABRAMS, NEIL

ART UNIT	PAPER NUMBER
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2839

DATE MAILED: 11/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/692,174	Applicant(s) ELDRIDGE	
	Examiner Neil Abrams	Art Unit 2839	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9-1-06
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26, 33, 35, 36, 41, 42, 48, 73-85, 87, 89-92, 94-99 is/are pending in the application.
- 4a) Of the above claim(s) 35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26, 33, 36, 41, 42, 48, 73-85, 87, 89-92, 94-99 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

In last office action omission of claims 93-99 from the rejection was due to error. Therefore the rejection is now set forth to include these claims. Claims 89, 91 dependencies are incorrect. Drawings objected to , figs 9B, 9C no. 912 and leadline must be added.

Claims 26-33, 36-99 are rejected, under 35 USC 112 first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventors at the time the application was filed had possession of the claimed invention.

The claim 26,42, , etc recitations of the tip comprises substantially palladium cobalt alloy and the body does not comprise such material and the claims 94,95, etc recitations of the tip comprises substantially palladium or its alloy and the body does not comprise such material are not found in the disclosure as filed. Note that these matters must be clearly disclosed to provide proper basis for claim limitations. Nor does any fig appear directed to such structures. To rebut this rejection applicant should point out basis for these limitations by page and line numbers and fig no. Note that material recited in claims must be shown in drawings.

Claims 26, 33, 36, 41, 42, 48, 73-85, 87, 89-92, 94-99, (all pending claims) are rejected under 35 U.S.C. 103(a) as being unpatentable over Faraci in view of Fjelstad, Abys, Yanof and Littlebury.

For claim 26, Faraci, figures 5B, 3C, 3D, discloses a contacts (probes) used for testing, each with base or post 180 and resilient body 200, the base secured to

substrate 110 and the body having a tip 320. The tips may be of a hard metal such as gold while the base and body 200 would typically be copper. Faraci does not disclose the tip as formed of palladium (Pd) or of Pd cobalt alloy. Yanof uses a Pd on a contact body formed of nickel, column 5, lines 30-42. Fjelstad discloses tips with caps 34, 318 that may be palladium or Pd alloy for hardness and sharpness. Littlebury uses palladium for a tip at 17 for wear resistance and to avoid oxidation, see col 3, lines 20-30. Abys, column 1, lines 10-15 added for discussion of Pd and "Pd cobalt alloy" for electrical contacting. Therefore for claims 26, 42 obvious to use Pd or Pd alloy to provide hardness and lower contact resistance at the Faraci contact tips and so that tips do not develop oxide, and further to use Pd cobalt alloy since that choice produces no stated advantage over other Pd alloys or Pd itself and also since that choice is suggested by Abys.

For claims 94, 95, 99, obvious to use (Pd) or Pd alloy for the contact tips in view of the secondary references for hardness and to prevent oxide development.

Dependent claims covered by above discussion and do not seem at issue. Use of specific pitch and specific test object define no structure cover the prior art and do not seem at issue. For claims 76, 83 obvious to use only one probe per terminal to save on cost.

1. Claims 26, 33, 36, 41, 42, 48, 73-85, 87, 89-92, 94-99 (all pending claims) are rejected under 35 U.S.C. 103(a) as being unpatentable over Beaman 982 in view of Fjelstad, Abys, Yanof and Littlebury.

2. Beaman figure 13 probe device includes probes which may be formed as at 70 see fig 10; each one having a base 21, a body 24 of resilient non Pd material and a flat tip 71. Beaman does not disclose the tip to be formed of Pd cobalt alloy or use of Pd or Pd alloy. Fjelstad at cap 34 discloses use of Pd or a PD alloy. Yarof at 35 uses a Pd tip. Littlebury at 17 use a Pd cap. Abys discloses use of PD cobault layers for good electrical properties. Also see above discussion of these pats. It would have been obvious for claims 94-99 to use Pd or an alloy for tips 71 and for claims 26-92. to use Pd cobalt alloy for the Beaman tips 71, in view of these references, to enable less oxidation^{and} for hardness, etc. Claims 23, 78, the tips 71 electroplated would be integral[^] with the bodies. Claims 41, 48 note figure 13 probe card 10. For claim 87, pitch is seemed to be a matter of obvious selection of dimension. For claim 97, specific device tested does not avoid the rejection.

Witting and Ko also teach probe tips formed of Pd.

3. Applicant's arguments filed with the amendment have been fully considered but they are not persuasive. Claims 95, 96, 97, 98 references to "semiconductor die", "bond pads" do not define over 265 of Faraci. Also note use of the device for testing or temporary contact. Claims 87, 94 selection of pitch deemed obvious matter of design; clearly Faraci bump spacing could be made very close. Claims 92, 94 reference to "flat terminals" does not define over structure of the Faraci apparatus and do not appear at issue. As to main argument, reference to Pd cobalt alloy with "no" indication in specification of purpose or advantage does not overcome use of Pd either alone or in other alloys as in Yarof, Littlebury, Fjelstad. Therefor both rejections of claims 26,42


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proper even without Abys. Abys is used to show that cobalt, improves palladium function and further suggests use of such alloy for other electrical items such as probe tips.

Yarof, Littlebury, Fjelstad, Witting and Ko all show use of palladium for probe tips. It seems clear that listing of Pd is intended to include Pd alloys since the material is usually used in alloy form. Therefor use of Pd or Pd alloy for tips of specific type probes would be an obvious variation

4. Beaman has been applied in above rejections since that patent clearly shows "flat" terminals on test device but is applied to all claims under examination in case issue arise as to rejection using Faraci.

Any inquiry concerning this communication should be directed to Neil Abrams at telephone number 571-272-2089


NEIL ABRAMS
PRIMARY EXAMINER